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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,971	06/25/2003	Takayuki Hayashi	4041K-000138	3763
27572	7590	12/17/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			MCKINNON, TERRELL L	
			ART UNIT	PAPER NUMBER
			3743	

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/603,971	HAYASHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Terrell L Mckinnon	3743	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

Receipt is acknowledged of applicant's amendment filed September 1, 2004.

Claims 1-7 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new grounds of rejection.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by DE (3 212 913) (Applicant's IDS reference).

DE ('913) discloses a shell in tube heat exchanger comprising all of the applicant's claimed and disclosed limitations of the instant invention.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE (3 212 913) in view of Japanese Patent (11-237192) (Applicant's IDS reference).

DE ('913) discloses a shell in tube heat exchanger comprising:

- at least two casings composing a coolant passage in which the coolant flows, formed into a circular pipe shape;
- a coolant inlet is provided at one of the first and second longitudinal ends of each of the casings and a coolant outlet is provided at the other of the first and second longitudinal ends of each of the casings;
- the cross-section of the heat exchanger is circular;
- the two casings are connected by a detachable joining means;
- the two casings are arranged in parallel with each other in a horizontal direction;
- each of the exhaust gas passages is defined by a plurality of tubes, the plurality of tubes being arranged on concentric circles both ends of the plurality of tubes being held by a respective core plate.

DE ('913) fails to disclose the heat exchanger cores respectively arranged in the two casings, having an exhaust gas passage in which the exhaust gas flows from a first longitudinal end to a second Longitudinal end of the two casings, wherein both casings are integrated into one body so that the longitudinal directions of the casings can be substantially parallel with each other; and bonnets for closing the first and second longitudinal ends of the casing and communicating the exhaust gas passage with the

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exhaust gas pipe are provided at both the first and second longitudinal ends of the two casings, and the casings are integrated into one body by the bonnets.

5. However, JP ('192) teaches a heat exchanger having cores respectively arranged in the two casings, having an exhaust gas passage in which the exhaust gas flows from a first longitudinal end to a second Longitudinal end of the two casings, wherein both casings are integrated into one body so that the longitudinal directions of the casings can be substantially parallel with each other; and bonnets for closing the first and second longitudinal ends of the casing and communicating the exhaust gas passage with the exhaust gas pipe are provided at both the first and second longitudinal ends of the two casings, and the casings are integrated into one body by the bonnets .

Given the teachings of JP ('192), it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat exchanger of DE (3 212 913) with a heat exchanger having cores respectively arranged in the two casings, having an exhaust gas passage in which the exhaust gas flows from a first longitudinal end to a second Longitudinal end of the two casings, wherein both casings are integrated into one body so that the longitudinal directions of the casings can be substantially parallel with each other; and bonnets for closing the first and second longitudinal ends of the casing and communicating the exhaust gas passage with the exhaust gas pipe are provided at both the first and second longitudinal ends of the two casings, and the casings are integrated into one body by the bonnets.

Doing so would provide a thermally efficient integrated heat exchanger for cooling exhaust gases.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited for disclosing related limitations of the applicant's claimed and disclosed invention. Gorman, Hayashi et al and Akao et al.

### ***Response to Arguments***

Applicant's arguments filed September 1, 2004 have been fully considered but they are moot in view of the new grounds of rejection as stated above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Terrell L McKinnon  
Primary Examiner  
Art Unit 3743  
December 13, 2004